

# International Highway Research & Technology Digest

NCHRP Project 20-36  
Highway Research and Technology—International Information Sharing

SPRING 2000

## Preface

National Cooperative Highway Research Program (NCHRP) Project 20-36 provides funding for travel costs for state highway agency representatives who want to participate in international meetings on highway technologies, but who are unable to do so because of funding constraints. Participants who receive travel funding are required to submit a trip report, which consists of a description of their involvement in the meeting, a summary of what they learned or accomplished at the meeting, a list of benefits that may be transferable to highway transportation practice in the United States, and suggestions on how this information could be disseminated or implemented within the American Association of State Highway and Transportation Officials and its member departments.

To ensure that the information gleaned by those participants is available to the entire U.S. highway community, NCHRP Project 20-36 prepares summaries of the trip reports, which are included in the *Digest*.

For more information on a particular meeting, contact the individual listed at the end of the meeting summary.

For more information on NCHRP Project 20-36, contact Chris Hedges at the Transportation Research Board (phone: 202-334-1472; fax: 202-334-2006; email: [chedges@nas.edu](mailto:chedges@nas.edu)).

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## Performance Indicators for the Road Sector Field Test Committee Meeting (OECD-IR7)

March 3–5, 1999 • Helsinki, Finland

*Based on a report by Janet Blacik, Minnesota Department of Transportation*

The Organization for Economic Cooperation and Development (OECD) IR7 Performance Indicators for the Road Sector Field Test Committee met in Helsinki, Finland, March 3–5, 1999, first, to edit draft reports on each of 15 performance indicators (PIs) selected for use in measuring the performance of road administrations (RAs), and second, to discuss the final report of the committee based on a field study it carried out on the use of performance indicators in the road transport sector.

The minutes of the previous meeting were approved. Members then decided on a structure for the final analysis of each PI, consisting of an introduction, an analysis/conclusion, case examples, recommendations, and tables. Each PI owner was to try to finalize the analysis of the PIs following that structure and certain basic instructions. Additional information gained from the meeting was to be included in the final analysis of each PI by the end of April 1999.

Members considered each PI in sequence, drawing conclusions and determining related additional tasks still to be carried out.

Members then discussed the draft content of the final report. Among the issues discussed were the size of the final report, which will be decided at the last meeting; and numerous alternative approaches that

will be submitted by the Secretariat to OECD for opinion. The Secretariat will produce first drafts of chapters II, III, and IV for circulation in advance of the last meeting. Drafts will be edited by Janet Blacik and Les Hawker of the Highways Agency, UK, along with the Secretariat.

The group discussed other alternatives, including the following:

- A new group to set up annual benchmarking statistics by OECD,
- A series of seminars about the group's findings,
- Presentation of a model for road administrations to benchmark or learn from each other,
- Follow-up recommendations for each indicator, and
- Inclusion of only major learnings in the final report

These alternatives will be discussed with OECD and decided at the last meeting.

The group's last meeting was set for Paris on June 17–18, 1999.

For more information, contact Janet Blacik at Minnesota DOT (phone: 651-296-4876; fax: 651-282-9834; email: janet.blacik@dot.state.mn.us).

## PIARC Working Group 1 (G1)

April 21–22, 1999 • Sapporo, Japan

*Based on a report by Andrew Mergenmeier, Federal Highway Administration*

In preparation for the XIth Winter Road Congress, the first meeting of the PIARC Working Group 1 (G1) was held in Sapporo,

Japan, on April 21–22, 1999. The Congress, which occurs every 4 years, is to be held in Sapporo in the year 2002. The major function

of G1 has been as a steering committee for the Congress.

The main responsibilities of G1 include discussing the Congress program; determining the Congress theme and topics; calling for and selecting papers; discussing public relations activities; and coordinating with related organizations.

The Congress Web site is [www.piarc-sapporo2002.road.or.jp](http://www.piarc-sapporo2002.road.or.jp)

Two secretaries were appointed: English language, Kent Gustafson, Sweden; and French language, Didier Giloppe, France.

Members discussed and determined the Congress theme and topics, as well as a work schedule leading up to the Congress. The next G1 meeting was set for October 4–5, 1999, in Kuala Lumpur, Malaysia, during the PIARC International Road Congress. The follow-on meeting was set for

PIARC Headquarters in Paris on March 20–21, 2000; members gave priority to attendance at the latter meeting.

Three proposals were submitted to members for discussion, with a request for comment. Those were:

- France proposed the creation of a glossary on winter road management;
- France made a proposal on the support of countries in the process of modernizing their winter road management projects; and
- Japan proposed to develop an international road snow and ice data book.

It is expected that the proposals will be discussed at the March 2000 meeting.

For more information, contact Andrew Mergenmeier at FHWA, Virginia Division (phone: 804-775-3362; fax: 804-775-3356; email: [andy.mergenmeier@fhwa.dot.gov](mailto:andy.mergenmeier@fhwa.dot.gov)).

## OECD Scientific Expert Group on Asset Management Systems

June 3–4, 1999 • Paris, France

*Based on a report by Daniel D'Angelo, New York State DOT*

The Organization for Economic Cooperation and Development (OECD) Scientific Expert Group (IM1) on Asset Management Systems met for the first time in Paris, France, on June 3–4, 1999. Composed of members from 17 countries and operating under the OECD Road Transport and Intermodal Linkages Research Program (RTR), the group was established to develop a report that explains the economic and policy implications of an asset management system and provides policy recommendations and suggestions for OECD member countries that choose to implement an asset management system.

The meeting's major accomplishments included:

- Agreeing on the outline and content of the report;

- Determining 11 specific action items necessary to complete the report;
- Assigning action items to the members present;
- Creating a timetable for activities;
- Defining coordination efforts with PIARC; and
- Determining the next meeting's agenda, date, and location.

Because of the group's interest in Federal Highway Administration (FHWA) involvement with asset management and in the U.S. Governmental Accounting Standards Board proposed rules requiring governments to calculate the value of every major asset owned, the United States was assigned the task of writing a chapter on data and analysis requirements, including accounting and

capitalization methods, for the OECD final report. Daniel D'Angelo of the New York State DOT was also assigned the task of writing a chapter on identifying appropriate components for an asset management system, starting from New York State DOT's draft *Blueprint for Developing and Implementing an Asset Management System*.

A draft report was scheduled to be completed by early October 1999, with a final report scheduled to be submitted to the RTR Steering Committee for publication in April 2000.

For more information, contact Daniel D'Angelo at New York State DOT (phone: 518-457-6467; fax: 518-457-6477; email: ddangelo@gw.dot.state.ny.us).

## 10<sup>th</sup> International Conference, "Traffic Safety on Two Continents"

September 20–22, 1999 • Malmö, Sweden

*Based on a report by Jake Kononov, Colorado DOT*

The 10<sup>th</sup> International Conference, "Traffic Safety on Two Continents," held September 20–22, 1999, in Malmö, Sweden, dealt with comprehensive strategies for improvement of road safety on regional, State, and national or supernational levels. Jointly sponsored by TRB, VTI, and BAST, it offered a chance to initiate international cooperation on the development of accident prediction models reflecting various classes of roads in different environments.

The numerous papers delivered presented an opportunity to learn about state-of-the-art developments in traffic engineering from professionals around the world. Among the

topics covered were the relationship between traffic safety and traffic volume on rural freeways and the conceptual development of levels of service of safety; a risk analysis and evaluation system for highway safety; gaining access to Highway Safety Information System (HSIS) data for use in international research; and the development of accident modification factors for roadway segments and intersections.

For more information, contact Jake Kononov at Colorado DOT (phone: 303-757-9039; fax: 303-757-9219; and email: jake.kononov@dot.state.co.us).

## World Road Association Meetings

### Committee C-4 (Roads, Transport, and Regional Development)

May 18–19, 1999 • Oslo, Norway

*Based on a report by Gary Gould, Illinois DOT*

Committee C-4 (Roads, Transport, and Regional Development) met in Oslo, Norway, on May 18–19, 1999. The first segment of the meeting dealt with arrangements for the World Road Congress in Kuala Lumpur, Malaysia, in fall 1999. Members discussed committee involvement with session KL3 on sustainable transport and the group's own

separate session. The KL3 session will consist of a panel discussion, including an expert on public participation. The KL3 final report is not yet available.

The C4 session at Kuala Lumpur will be 2½ hours long, in two, equal segments. The first segment will consist of Chairman Deterne's introduction and reports on committee activities by Mr. Van Dessel, the committee's French-speaking secretary, and the work group leaders. Mr. Deterne will

then address possible future topics for the committee. The second segment will consist of a presentation by M.G. Vuillemin on the report of quality of service, followed by presentations of papers by invited authors and conclusions by Mr. Deterne.

Next, work group leaders addressed the progress of their reports:

- C-4.1, Transport and Mobility. Paul Arsenault discussed replies to his questionnaire. He will complete a synthesis by June 1999.
- C-4.2, Intermodality. Committee progress was not reported.
- C-4.3, Quality of Service. Mr. Vuillemin has completed the introductory report and submitted it to PIARC. The full report was distributed in draft form and should be completed and published by July 1999.
- C-4.4, Traffic Management. Kjell Bjorvig circulated a second draft of the group's report, which should be completed for the Kuala Lumpur Congress.

- C-4.5, Environment and Public Consultation. Seppo Sillan reported that the group's report was completed and submitted to PIARC for printing.

Other points of interest discussed during the meeting were the following:

- Poland is significantly reducing its Road Administration staff and transferring much of its national road network to local authorities. They are looking to more traditional methods of financing after problems with Build-Operate-Transfer concessions.
- Norway has instituted a program to reduce traffic fatalities by more than 50 percent by 2010. Proposals include reducing allowable blood alcohol; allowing only hands-free cellular phone use in automobiles; and lowering speed limits on motorways and ordinary roads.

For more information, contact Gary Gould at Illinois DOT (phone: 217-782-6667; fax: 217-524-4922; email: gouldgd@nt.dot.state.il.us).

## Committee C-9 (Financing and Economic Evaluation)

October 21–23, 1998 • Quebec, Canada

*Based on a report by Clyde E. Pyers, Maryland State Highway Administration*

Committee C-9 met in Quebec, Canada, on October 21–23, 1998. The meeting began by taking comments from members on the committee's proposed report, "Guide for New Methods of Funding Public Private Partnerships." The report, which received extensive comment, concerns new financing techniques that are being tested worldwide. It was approved by the committee and will be sent to the PIARC Secretariat in winter 1999.

The committee reviewed and approved the draft Report on Activities prepared by the chairman. It will be sent to the PIARC Secretariat in winter 1999. M. Danzanvilliers presented a redraft of the paper, "How to Involve Elements of Sustainability in Eco-

nomic Evaluation." It will be published in the PIARC Journal, *Routes/Roads*.

The following presentations were made to the committee:

- Claire Monette, Assistant Deputy Minister, Transport Quebec, thanked the committee for their work in financing and economic evaluation of roads;
- Gerard Pelletier, President of National Committee, Quebec, explained the role of PIARC in Quebec and its working relationships with other provincial transport organizations;
- Maurice Boucher, Head of Strategic Orientations, Ministry of Transport, Quebec, gave a presentation on the conditions and financing of highways and



- roads under the jurisdiction of Quebec;
- Pierre Toupin, Director of Strategic Planning in Transport, presented an overview on public-private partnerships for highways in Canada; and
  - Jean-Pierre Tassé, Secretary General of World Interchange Networks gave a presentation on the creation, services, and achievements to date of the network.
- Much of the remaining meeting was devoted

to finalizing reports for the 1999 World Road Congress in Kuala Lumpur, Malaysia. In addition, members visited the urban motorway network around Quebec City and the Pont de Quebec and the Pont Pierre Laporte.

For more information, contact Clyde E. Pyers, Maryland State Highway Administration (phone: 410-545-0340; fax: 410-209-5015; email: cpyers@sha.state.md.us).

### Committee C-12 (Earthworks, Drainage, Subgrade)

June 21–22, 1999 • Lausanne, Switzerland

October 4, 1999 • Kuala Lumpur, Malaysia

*Based on reports by Edward Hoppe, Virginia Transportation Research Council (VTRC)*

Committee C-12 (Earthworks, Drainage, Subgrade) met in Lausanne, Switzerland, on June 21–22, 1999. Upon the retirement of Mr. Cheney as English secretary of the committee, Ed Hoppe was designated to that position.

After approving the minutes, members considered these committee publications:

- A report by Mr. Schaeffner, "Practical Guidelines for the Design and Construction of Road Embankments," received a final review; it is currently in print.
- An article by Mr. Cheney, "An Overview of Soil Nail Walls for Road Widening," was published in *Routes/Roads*.
- An article by Mr. Pfister, "Swiss Legislation Concerning the Drainage and Treatment of Surface Water from Roads," was published in *Routes/Roads*.
- Mr. Hoppe plans to complete an article on the Granada Symposium for *Routes/Roads* in July 1999.
- Mr. Cheney received no response from Mr. Millar regarding an article on soil improvement at the Te Papa National Museum in Wellington, New Zealand.
- A report by Mr. Havard, "Methods and Requirements for Reducing the Impact

of Road Projects on the Environment," was transmitted for publication to PIARC.

Members discussed topics for the 1995–1999 period, by work group, as follows:

- Work Area No. 1, Design and Construction—Topic 4.1.1, Impact of road projects on the environment, has been completed, and translations are under way for the final report. For Topic 4.1.2, Pathology of embankments, a synthesis of a survey has been completed by Mr. Havard, who requested feedback from members on a draft version.
- Work Area No. 2, Techniques for the Widening of Highways—Comments on the draft conclusions of the introductory report were received from the leader *in absentia*.
- Work Area No. 3, Soil Improvement—The leader, Mr. Lubking, distributed an outline of his proposed report on stabilization of soils with high water content, low bearing capacity, and high compressibility, with applicability to improving construction site traffic and foundation soils for highway fills, dams, and dikes.

- Work Area No. 4, Embankments with Waste Materials—For the present, the topic has been abandoned.
- Work Area No. 5, Water Movements—Mr. Hoppe is writing an article for *Routes/Roads* on the International Symposium on Subdrainage in Roadway Pavements and Subgrades. He plans to submit it to PIARC by July 1999.
- Work Area No. 6, Risk Management of Existing Slopes—The leader faxed the status of his report, which is nearing completion in the English version and reflects the comments of members.

Next, members discussed the organization of the World Road Congress in Kuala Lumpur. Panel members were appointed for the KL-1 and C-12 sessions. Members decided on structures for both sessions. If needed, additional individual presentation time will be made available. Of the 17 papers accepted for the World Road Congress, 9 have been submitted. If additional papers are received, they may be accepted for presentation at the complementary session. A session summary will be prepared. In addition, in reviewing the draft conclusions of the introductory report, members discussed environmental protection, motorway widening, and risk management of slopes. A final meeting before the World Road Congress was scheduled for October 4, 1999, in Kuala Lumpur.

At the October meeting in Kuala Lumpur, Malaysia, members replaced a panel member representing C-12 at the KL-1 sessions. Regarding the structure of the C-12 session, members decided on the following:

- A paper by Magnan, et al., "Use of reinforced soil structures for the widening of highways," will not be introduced as planned.

- A paper by Khay and Blivet, "Use of geosynthetic reinforcement to prevent localized sinkholes under road bases," will be announced at the session and presented at the poster session.
- The final structure of the C-12 was decided.
- Members decided on seating arrangements at the C-12 session.

In addition, draft conclusions of the introductory report were debated, and some changes were adopted. Members considered the following committee publications:

- A report by Mr. Schaeffner, "Practical Guidelines for the Design and Construction of Road Embankments," was published by PIARC.
- A report by Mr. Havard, "Methods and Requirements for Earthworks in Order to Reduce Environmental Impact of Road Projects," was also recently published.
- Mr. Wilson's report on motorway widening is essentially complete, and the final version will be sent to Mr. Escario for publication approval.
- Mr. Lubking's report on ground improvement techniques will be finalized by the end of 1999.
- Mr. Shimazu distributed his final report, "Contribution to Risk Management of Existing Slopes," and asked members to send review and comment to Mr. Escario and Mr. Shimazu within a month after the meeting, for a decision on publication.

For more information, contact Ed Hoppe at Virginia Transportation Research Council (phone: 804-293-1960; fax: 804-293-1990; email: ejh4c@virginia.edu).

## Committee C-16 (Intelligent Transportation Systems)

May 18–21, 1999 • Stockholm, Sweden

*Based on a report by Les Jacobson, formerly of Washington State DOT*

Committee C-16 (Intelligent Transportation Systems) met in Stockholm, Sweden, on May 18–21, 1999. The meeting began with a discussion of Y2K readiness activities in the countries represented. The United States', Canada's, and the European countries' ITS systems seemed to be in states of readiness or near-readiness, whereas the economies in transition and the developing nations were behind and questionable as to their readiness.

Members discussed congestion pricing in the United Kingdom and Denmark. In the United Kingdom, legislation has been introduced to allow congestion pricing, with a pilot project to be initiated later in one city. Denmark is pursuing a pilot project using a global positioning system (GPS) in combination with a digital map and meters in vehicles; tolls will vary by location and time of day.

The committee discussed the lack of integration of ITS into the normal business of road authorities. European governments are looking for ways to mainstream ITS. Committee actions to help integrate ITS into agency, policy, planning, and programming areas, the committee decided, will be high-priority items in the upcoming years.

Members looked at a system being developed by the Dutch DOT that will automatically change illumination levels on the

basis of traffic conditions, environmental conditions, and light levels, leading to energy savings and safety improvements.

Saying that most international road authorities have very little input into the development of international standards, the representative of the United Kingdom stated that PIARC members should take a role in the standards development process in order to see their own interests reflected.

The committee is finalizing a handbook on ITS actions that should be published in September 1999.

The Swedish National Road Association will conduct field trials of intelligent speed adaptation systems, a system for improving safety through increasing compliance with safe speeds under a variety of conditions by delivering speeds appropriate for conditions directly to the driver of a vehicle. Two schemes are being tested:

- A GPS-based system with a digital map database to automatically identify locations that have a static reduction in speed; and
- Use of short-range transmitters to allow more dynamic determination of safe speed.

For more information, contact Les Jacobson (phone: 206-382-5290; fax: 206-382-5222; and email: jacobsonl @pbworld.com).